

Navy Advancement Center

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Advancement Handbook for Gunner's Mate

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PREFACE

The purpose of the Advancement Handbook is to assist Gunner's Mates (GM) in studying for Navy wide advancement-in-rating examinations. The bibliographies (BIBs) together with this handbook form a comprehensive examination study package. Since this handbook provides skill and knowledge components for each paygrade of the GM rating, it helps you concentrate your study on those areas that may be tested. This feature will help you get the most out of your study time.

Each page in Parts 1 through 4 of this Advancement Handbook presents general skill areas, specific skill areas, the knowledge factors associated with each skill area, the pertinent references that address each skill, and the subject areas that may be covered on the examination. The skill statements describe the skills you are expected to perform for each paygrade. The skill statements are cumulative; that is, you are responsible for the skills for the paygrade you are competing for, your present paygrade, and all paygrades below.

Although this handbook is very comprehensive, it cannot cover all the tasks performed in the rating. As a result, the advancement examinations may contain questions more detailed than described in the *Exam Expectations* section of the skill areas.

Remember that advancement competition is keen, so your keys to advancement include not only comprehensive advancement examination study, but also sustained superior performance.

Prepared by
Naval Advancement Center,
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CONTENTS

PARTS		PAGE
1	Advancement Handbook for GM3.....	1-1
2	Advancement Handbook for GM2.....	2-1
3	Advancement Handbook for GM1.....	3-1
4	Advancement Handbook for GMC	4-1
Appendix A	References Used in This Advancement Handbook.....	A-1

Part 1

Advancement Handbook for GM3

Advancement Handbook for GM3

General GM Skill Area	Weapon Systems Operations
A <i>skill</i> you are expected to perform from the General Skill Area above:	Conduct Overall Combat Systems Operability Tests (OCSOT), Combat System Operability Test (CSOT) And Daily System Operability Checks (DSOT)
Knowledge you should have to perform this skill:	<p>Interface between Fire Control and Launcher: (OCSOT, CSOT)</p> <ul style="list-style-type: none"> • AEGIS • Mk 34 GWS • Mk 86 GFCS • Mk 92 FCS <p>Components of the basic fire control system:</p> <ul style="list-style-type: none"> • Computer • Director and radar • Stable element <p>Fire control problems:</p> <ul style="list-style-type: none"> • Ballistics <p>Interface between Launcher Control and Launcher (DSOT):</p> <ul style="list-style-type: none"> • Local modes of operation • Train and elevation indicators • Train and elevation power drives • Train and elevation limit stops • Firing cutout assemblies

<p><i>References you should study to gain the knowledge you need to perform this skill:</i></p>	<ul style="list-style-type: none"> • Guided Missile System Mk 13 Mod 4 Chaps 1, 2 and 3, Vol 1, Parts 1 and 2 (NAVSEA OP 4470) • Guided Missile System Mk 26 Mod 0-5 Chaps 1 and 2 (SW394-HO-MMO-020/GMLS) • Gun Mount, 5 Inch, 54-Caliber, Mk 45 Mod 2, Chaps 1 and 2, Vol 1, Part 1 (SW323-F2-MMO-010/GM) • Gun Mount, 5 Inch, 54-Caliber, Mk 45 Mod 2, Chaps 7, 8, 9, 10, and 11, Vol 2, Part 1 (SW323-F2-MMO-040/GM) • Gun Mount, 76- MM, 62-Caliber, Mk 75 Mods 0 and 1, Chaps 1 through 6 (SW314-AO-MMM-A10/GM) • Mk 75 0-1 and chaps 7 through 10 (SW314-AO-MMM-A20/Mk 75) • Gunner's Mate, Chaps 7, 10 (NAVEDTRA 12443)
<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>Fire control systems that interface with:</p> <ul style="list-style-type: none"> • Gun mounts and missile launchers • Fire control components • Ballistics <p>Launcher and Gun Mount components that are a integral part of the fire control problem:</p> <ul style="list-style-type: none"> • Fire cutout assemblies • Train and elevation limit stops • Train and elevation indicators

Advancement Handbook for GM3

General GM Skill Area	Weapon Systems Operations
<i>A skill you are expected to perform from the General Skill Area above:</i>	Conduct GML And Gun Mount Prefiring And Postfiring Checks
<i>Knowledge you should have to perform this skill:</i>	<ul style="list-style-type: none"> • Pre-fire and post-fire tests on missile launchers and gun mounts • Pre-arming and arming ordnance • Emergency launcher firing (weapon jettisons)
<i>References you should study to gain the knowledge you need to perform this skill:</i>	<ul style="list-style-type: none"> • Guided Missile System Mk 13 Mod 4 Chaps 1, 2 and 3, Vol 1, Parts 1 and 2 (NAVSEA OP 4470) • Guided Missile System Mk 26 Mod 0-5 Chaps 1 and 2 (SW394-HO-MMO-020/GMLS) • Gun Mount, 5 Inch, 54-Caliber, Mk 45 Mod 2, Chaps 1 and 2, Vol 1, Part 1 (SW323-F2-MMO-010/GM) • Gun Mount, 5 Inch, 54-Caliber, Mk 45 Mod 2, Chaps 7, 8, 9, 10, and 11, Vol 2, Part 1 (SW323-F2-MMO-040/GM) • Gun Mount, 76- MM, 62-Caliber, Mk 75 Mods 0 and 1, Chaps 1 through 6 (SW314-AO-MMM-A10/GM) • Mk 75 0-1 and chaps 7 through 10 (SW314-AO-MMM-A20/Mk 75) • Gunner's Mate, Chaps 6, 7, 8 (NAVEDTRA 12443) • Vertical Launching System Mk 41 Chap 2 (SW394-AF-MMO-020/VLS)

<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<ul style="list-style-type: none"> • Pre-arming and arming ordnance • Weapons jettisons
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Advancement Handbook for GM3

General GM Skill Area	Weapon Systems Operations
<i>A skill you are expected to perform from the General Skill Area above:</i>	Test Operate Gun And Missile Loading Systems
<i>Knowledge you should have to perform this skill:</i>	<p>Modes of operation for missile launchers and gun mounts:</p> <ul style="list-style-type: none"> • Automatic • Step
<i>References you should study to gain the knowledge you need to perform this skill:</i>	<ul style="list-style-type: none"> • Guided Missile System Mk 13 Mod 4 Chaps 1, 2, and 3, Vol 1, Parts 1 and 2 (NAVSEA OP 4470) • Guided Missile System Mk 26 Mod 0-5 Chaps 1 and 2 (SW394-HO-MMO-020/GMLS) • Gun Mount, 5 Inch, 54-Caliber, Mk 45 Mod 2 , Chaps 1 and 2, Vol 1, Part 1 (SW323-F2-MMO-010/GM) • Gun Mount, 5 Inch, 54-Caliber, Mk 45 Mod 2, Chaps 7, 8, 9, 10, and 11, Vol 2, Part 1 (SW323-F2-MMO-040/GM) • Gun Mount, 76-MM, 62-Caliber, Mk 75 Mods 0 and 1, Chaps 1 through 6 (SW314-AO-MMM-A10/GM) Mk 75 0-1 and chaps 7 through 10 (SW314-AO-MMM-A20/Mk 75) • Gunner's Mate, Chaps 6, 7 (NAVEDTRA 12443)

<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<ul style="list-style-type: none">• Operation cycles of loader systems
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Advancement Handbook for GM3

General GM Skill Area	Weapon Systems/Components Maintenance
<i>A skill</i> you are expected to perform from the General Skill Area above:	Test And Inspect GML And Gun Mount Assemblies. (Electronic Control Panels)
<i>Knowledge</i> you should have to perform this skill:	<p>Function of the launching system electronic control panels.</p> <p>Mk 13 Mod 4 GMLS:</p> <ul style="list-style-type: none"> • EP1 Power Panel • EP2 Control console • EP3 Electronics Panel <p>Mk 26 GMLS:</p> <ul style="list-style-type: none"> • ICS Integrated Control Station • PDC Power Distribution Center • MCC Main Control Console <p>Mk 41 Vertical Launching Systems:</p> <ul style="list-style-type: none"> • LCU 1&2 Launcher Control Units • RLEP Remote Launch Enable Panel • Status Panel • Power Distribution Panels
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Guided Missile System Mk 13 Mod 4 Chaps 1, 2, and 3, Vol 1, Parts 1 and 2 (NAVSEA OP 4470) • Guided Missile System Mk 26 Mod 0-5 Chaps 1 and 2 (SW394-HO-MMO-020/GMLS) • Vertical Launching System Mk 41 Chap 2 (SW394-AF-MMO-020/VLS)

<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<ul style="list-style-type: none"> • Function and description of major components of the GMLS control stations.
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Advancement Handbook for GM3

General GM Skill Area	Weapon Systems/Components Maintenance
<i>A skill</i> you are expected to perform from the General Skill Area above:	Test And Inspect GML And Gun Mount Assemblies. (Magazines)
<i>Knowledge</i> you should have to perform this skill:	<p>The primary function and description of GMLS magazines and mechanical components associated with GMLS magazines</p> <p>Mk 13 Mod 4:</p> <ul style="list-style-type: none"> • Base • Stand • Outer Shell • Inner Structure (RSR, Hoist components) <p>Mk 26 GMLS:</p> <ul style="list-style-type: none"> • A-and B- ready service ring assemblies • A-and B fin opener assemblies • Missile strikedown-intertransfer mechanism <p>Mk 41 VLS:</p> <ul style="list-style-type: none"> • Standard Modules • System Module • Strikedown Module • Plenum Chamber
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Guided Missile System Mk 13 Mod 4 Chaps 1, 2 and 3, Vol 1, Parts 1 and 2 (NAVSEA OP 4470) • Guided Missile System Mk 26 Mod 0-5 Chaps 1 and 2 (SW394-HO-MMO-020/GMLS) • Gunner's Mate, Chaps 2, 7, 8 (NAVEDTRA 12443) • Vertical Launching System Mk 41 Chap 2 (SW394-AF-MMO-020/VLS)

<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<ul style="list-style-type: none"> • General description of GMLS magazines.
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Advancement Handbook for GM3

General GM Skill Area	Weapon Systems/Components Maintenance
<i>A skill</i> you are expected to perform from the General Skill Area above:	Test And Inspect GML And Gun Mount Assemblies. (Guided Missile Launcher And Vertical Launching System)
<i>Knowledge</i> you should have to perform this skill:	<p>The primary function and description of the Guided Missile Launcher</p> <p>Mk 13 Mod 4:</p> <ul style="list-style-type: none"> • Missile Launcher Carriage • Missile Launcher Guide • Train Power Drive • Elevation Power Drive <p>Mk 26 GMLS:</p> <ul style="list-style-type: none"> • Missile Launcher Platform • Missile Launcher Carriage • Missile Launcher Guides • Train and Elevation Power Drives • Jettisoning Unit Assemblies <p>Mk 41 VLS:</p> <ul style="list-style-type: none"> • Modules • Platform
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Guided Missile System Mk 13 Mod 4 Chaps 1, 2, and 3, Vol 1, Parts 1 and 2 (NAVSEA OP 4470) • Guided Missile System Mk 26 Mod 0-5 Chaps 1 and 2 (SW394-HO-MMO-020/GMLS) • Gunner's Mate, Chaps 7, 8 (NAVEDTRA 12443) • Vertical Launching System Mk 41 Chap 2 (SW394-AF-MMO-020/VLS)

<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<ul style="list-style-type: none"> • Functions and descriptions of guided missile launchers and vertical launchers
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Advancement Handbook for GM3

General GM Skill Area	Weapon Systems/Components Maintenance
<i>A skill</i> you are expected to perform from the General Skill Area above:	Test And Inspect GML And Gun Mount Assemblies
<i>Knowledge</i> you should have to perform this skill:	<p>The function of the Gun Mount Electronic Control Panels: (Indicators, Switches, Modules)</p> <p>Mk 75 Gun Mount gun control panels:</p> <ul style="list-style-type: none"> • Inside top cover • Inside top compartment • Right side • Left side • Barrel Cooling Control Panel <p>Mk 45 Gun Mount Control Panel:</p> <ul style="list-style-type: none"> • EP1 Power Panel • EP2 Control Panel • Train and Elevation Local Control Unit • EP3 Display Panel
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Gun Mount, 5 Inch, 54-Caliber, Mk 45 Mod 2, Chaps 1 and 2, Vol 1, Part 1 (SW323-F2-MMO-010/GM) • Gun Mount, 5 Inch, 54-Caliber, Mk 45 Mod 2, Chaps 7, 8, 9, 10, and 11, Vol 2, Part 1 (SW323-F2-MMO-040/GM) • Gun Mount, 76- MM, 62-Caliber, Mk 75 Mods 0 and 1, Chaps 1 through 6 (SW314-AO-MMM-A10/GM) Mk 75 0-1 Chaps 7 through 10 (SW314-AO-MMM-A20/Mk 75) • Gunner's Mate, Chap 6 (NAVEDTRA 12443)

<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<ul style="list-style-type: none"> • General description of electrical control panel components
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Advancement Handbook for GM3

General GM Skill Area	Weapon Systems/Components Maintenance
A <i>skill</i> you are expected to perform from the General Skill Area above:	Test And Inspect GML And Gun Mount Assemblies (Hydraulic Systems, Loading Systems)
Knowledge you should have to perform this skill:	<p>Major components of gun mounts Mk 75</p> <p>Hydraulic system:</p> <ul style="list-style-type: none"> • Hydraulic oil tank assembly • Filter assembly • Motor and pump assembly • Accumulator assembly • Bypass assembly <p>Lower and Upper Loading Systems (Lower):</p> <ul style="list-style-type: none"> • Revolving magazine • Screw feeder <p>(Upper):</p> <ul style="list-style-type: none"> • Rocking arms • Loader drum • Carriage assembly • Transfer tray • Equilibrator and compensator assemblies • Slide assembly • Weather shield and gun barrel • Train and elevation systems <p>Mk 45 Gun Mount:</p> <ul style="list-style-type: none"> • Lower loading system: • Loader drum • Lower hoist • Fuze setter • Upper hoist <p>Upper loading system:</p> <ul style="list-style-type: none"> • Cradle • Rammer • Breech mechanism

	<ul style="list-style-type: none"> • Empty case tray • Empty case ejector • Shield • Train and elevation systems
<p><i>References you should study to gain the knowledge you need to perform this skill:</i></p>	<ul style="list-style-type: none"> • Gun Mount, 5 Inch, 54-Caliber, Mk 45 Mod 2, Chaps 1 and 2, Vol 1, Part 1 (SW323-F2-MMO-010/GM) • Gun Mount, 5 Inch, 54-Caliber, Mk 45 Mod 2, Chaps 7, 8, 9, 10, and 11, Vol 2, Part 1 (SW323-F2-MMO-040/GM) • Gun Mount, 76-MM, 62-Caliber, Mk 75 Mods 0 and 1, Chaps 1 through 6 (SW314-AO-MMM-A10/GM) • Mk 75 0-1 Chaps 7 through 10 (SW314-AO-MMM-A20/Mk 75) • Gunner's Mate, Chap 5 (NAVEDTRA 12443)
<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<ul style="list-style-type: none"> • General information about the major components of gun mounts

Advancement Handbook for GM3

General GM Skill Area	Weapon Systems/Components Maintenance
<i>A skill</i> you are expected to perform from the General Skill Area above:	Clean And Inspect GML Heating And Cooling Components
<i>Knowledge</i> you should have to perform this skill:	Weapon Systems <ul style="list-style-type: none"> • Anti-icing system controller • Anti-icing heater and tank • Anti-icing lines • Fluid transfer valves • Bleeder plugs
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Guided Missile System Mk 13 Mod 4 Vol 1, Part 1 (NAVSEA OP 4470) • Guided Missile System Mk 26 Mod 0-5 Chaps 1 and 2 (SW394-HO-MMO-020/GMLS) • Gunner's Mate, Chap 8 (NAVEDTRA 12443) • Vertical Launching System Mk 41 Chap 2 (SW394-AF-MMO-020/VLS)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	<ul style="list-style-type: none"> • Purpose and function of components for guided-missile anti-icing system

Advancement Handbook for GM3

General GM Skill Area	Weapon Systems/Components Maintenance
<i>A skill</i> you are expected to perform from the General Skill Area above:	Clean, Inspect, And Lubricate GML Strikedown Components
<i>Knowledge</i> you should have to perform this skill:	Mk 13 Mod 4: <ul style="list-style-type: none"> • Strikedown hand control • Chain drive fixture • Manual air control valve and air supply • Strikedown dolly
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Guided Missile System Mk 13 Mod 4 Vol 1, Part 1 (NAVSEA OP 4470) • Gunner's Mate, Chap 8 (NAVEDTRA 12443)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	<ul style="list-style-type: none"> • Purpose and function of Mk 13 mod 4 strike down components

Advancement Handbook for GM3

General GM Skill Area	Weapon Handling/Maintenance
<i>A skill you are expected to perform from the General Skill Area above:</i>	Maneuver Weapons
<i>Knowledge you should have to perform this skill:</i>	<p>Handling equipment used in missile handling and underway replenishment</p> <p>Mk 13 Mod 4 GMLS:</p> <ul style="list-style-type: none"> • Mk 6 Mods 2&4 missile transfer dolly • Mk 13 Mod 4 strikedown equipment <p>Mk 26 GMLS:</p> <ul style="list-style-type: none"> • GMLS strikedown/intertransfer system <p>Mk 41 VLS:</p> <ul style="list-style-type: none"> • Five cell strikedown module • Canisters • Replenishment handling system equipment <p>Miscellaneous:</p> <ul style="list-style-type: none"> • Handling bands, slings • Hoisting beams • Mk 45 handlift truck • Missile stowage adapters • Stowage cradles • Crates • Pallets and adapters <p>Underway Replenishment:</p> <ul style="list-style-type: none"> • CON-REP • UN-REP • VERTREP
<i>References you should study to gain the knowledge you need to perform this skill:</i>	<ul style="list-style-type: none"> • Guided Missile System Mk 13 Mod 4 Chaps 1, 2, and 3, Vol 1, Parts 1 and 2 (NAVSEA OP 4470) • Guided Missile System Mk 26 Mod 0-5 Chaps 1 and 2 (SW394-HO-MMO-020/GMLS)

	<ul style="list-style-type: none"> • Vertical Launching System Mk 41 Chap 2 (SW394-AF-MMO-020/VLS) • Handling and Stowage of Naval Ordnance Vol. 1 (Aboard Ammunition ships NAVSEA OP3206) • Approved Handling Equipment for Weapons and Explosives (OP-2173) • Gunner's Mate, Chap 2 (NAVEDTRA 12443)
<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<ul style="list-style-type: none"> • Associated handling equipment for maneuvering weapons • Different replenishment methods use to transfer weapons

Advancement Handbook for GM3

General GM Skill Area	Weapon Handling/Maintenance
<i>A skill</i> you are expected to perform from the General Skill Area above:	Unpackage And Package Missile Components
<i>Knowledge</i> you should have to perform this skill:	<p>The different types of containers and Canisters.</p> <p>Containers:</p> <ul style="list-style-type: none"> • Mk 372 Standard Missile • Mk 632 Harpoon Missile • Mk 183 ASROC <p>Canisters:</p> <ul style="list-style-type: none"> • Mk 13 VLS SM-2 • Mk 14 Mod 0 and 1 VLS-Tomahawk • Mk 15 VLS ASROC • Mk 19 Training • Mk 21 VLS SM-2 Block 4 • Know how to prepare the listed containers and canisters for shipment.
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Vertical Launching System Mk 41 Chap 2 (SW394-AF-MMO-020/VLS) • Gunner's Mate, Chap 2 (NAVEDTRA 12443) • Inspection Requirements for Receipt, Segregation, Storage and Issue of Navy and Marine Corps Conventional Ammunition (Receipt, Storage, and Issue Sentencing) (NAVSEA TW010-AC-ORD-010)

<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<ul style="list-style-type: none">• Physical description and function of containers and canisters for missiles
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Advancement Handbook for GM3

General GM Skill Area	Weapon Handling/Maintenance
<i>A skill</i> you are expected to perform from the General Skill Area above:	Stow Ammunition (Separated, Fixed, Small Arms And Pyrotechnics)
<i>Knowledge</i> you should have to perform this skill:	<p>Characteristics and classification of explosives, propellants and pyrotechnics stowed in magazines:</p> <ul style="list-style-type: none"> • High explosive • Low explosive • Propellants • Smokeless powder • Initiating explosives <p>Pyrotechnics:</p> <ul style="list-style-type: none"> • Marine location markers • Marine illumination and smoke signals
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Navy Gun Ammunition (SW030-AA-MMO-010) • Identification of Ammunition (SW010-AF-ORD-010) • Pyrotechnic Screening, Marking, and Countermeasure Devices (NAVSEA (SW 020AC-SAF-020) • Ammunition Afloat, Chaps 2, 3 (OP4) • Ordnance Safety Precautions (NAVSEA OP3347) • Gunner's Mate, Chap 2 (NAVEDTRA 12443)

<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<ul style="list-style-type: none">• Characteristics and classification of explosives, propellants, and pyrotechnics stowed in magazines• Proper stowage arrangements for these munitions
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Advancement Handbook for GM3

General GM Skill Area	Weapon Handling/Maintenance
<i>A skill</i> you are expected to perform from the General Skill Area above:	Stow Ammunition (Separated, Fixed, And Small Arms)
<i>Knowledge</i> you should have to perform this skill:	<p>Classification, components, and features of Navy gun ammunition</p> <p>Projectile:</p> <ul style="list-style-type: none"> • Ogive • Bourrelet • Rotating band • Base <p>Types:</p> <ul style="list-style-type: none"> • Antiaircraft (AA) • Armor-piercing (AP) • Common (COM) • High capacity (HC) • High explosive (HE), (HE-PD), (HE-VT) • (HE-MT/PD) • Illuminating • Pocket-assisted projectile (RAP) • Target (TAR) • Variable time-nonfrag <p>Propelling Charges:</p> <ul style="list-style-type: none"> • Fixed • Separated
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Navy Gun Ammunition (SW030-AA-MMO-010) • Identification of Ammunition (SW010-AF-ORD-010) • Gunner's Mate, Chap 2 (NAVEDTRA 12443)

<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<ul style="list-style-type: none">• Classification, components, and features of Navy gun ammunition
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Advancement Handbook for GM3

General GM Skill Area	Ordnance/Component Maintenance
<i>A skill</i> you are expected to perform from the General Skill Area above:	Clean And Inspect Missiles Stowed In Magazines
<i>Knowledge</i> you should have to perform this skill:	<p>The basic structure of missiles SMS Guided Missiles:</p> <ul style="list-style-type: none"> • Airframe • Control system • Guidance systems • Propulsion • Warhead <p>Types and capabilities of SMS guided missiles:</p> <ul style="list-style-type: none"> • SM-1MR • SM-2 ER • Harpoon • Tomahawk <p>Proper care of guided missiles in magazines:</p> <ul style="list-style-type: none"> • Corrosion • Fuel leaks <p>Test missiles:</p> <ul style="list-style-type: none"> • Clean and inspect • Self-test of test missiles
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Standard Missile SM-1, SM-2MR, and VLS (MR&ER) Guided Missiles (SW800-AC-SAF-010) • Gunner's Mate, Chap 9 (NAVEDTRA 12443)

<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<ul style="list-style-type: none"> • Basic components of SMS guided missiles stowed in missile magazines. • Types of guided missiles • Care for missiles in magazines
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Advancement Handbook for GM3

General GM Skill Area	Small Arms/Security Forces Equipment
A <i>skill</i> you are expected to perform from the General Skill Area above:	Perform Maintenance On Line Throwing Kits And Adapters
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Components of the line throwing kits and adapters • Configure rifles for use as line throwing guns
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Description, Operation, and Maintenance Mk 87 Mod 1 Line Throwing Rifle Adapter Kit (SW350-A1-MMO-010) • Gunner's Mate, Chap 3 (NAVEDTRA 12443)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	<ul style="list-style-type: none"> • Mk 87 Mod 1 line throwing rifle adapter kit and what is needed in preparation for firing • How to configure rifles as line throwing guns

Advancement Handbook for GM3

General GM Skill Area	Small Arms/Security Forces Equipment
A <i>skill</i> you are expected to perform from the General Skill Area above:	Field Strip, Clean, And Inspect Small Arms
Knowledge you should have to perform this skill:	<p>The operating principals and characteristics of Navy small arm and machine guns.</p> <p>Hand Guns:</p> <ul style="list-style-type: none"> • .45 cal pistol • 9-MM pistol • .38 revolver <p>Shoulder Weapons:</p> <ul style="list-style-type: none"> • M14 rifle • M16A1 rifle • Remington M870 • Mossberg 500 <p>Machine Guns:</p> <ul style="list-style-type: none"> • .50- cal. machine gun • M60 machine gun • 25MM M242 machine gun • 20-MM machine gun <p>The assembly and disassembly of Navy small arms and machine guns</p> <p>The procedures for firing small arms and machine guns</p>
References you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • .45 Cal Pistol (TM 9-1005-211-12) • M14 Rifle (TM9-1005-223-20) • .50 Cal Machine Gun (TM9-1005-213-10) • M60 Machine Gun (TM9-1005-224-24) • .38 S/M Wesson (1005-206-14&P-1) • 40-MM Grenade Launcher (FM23-31) • 25MM M242 (SW360-AB-MMO-010) • Gunner's Mate, Chap 3 (NAVEDTRA 12443)

<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<ul style="list-style-type: none"> • Basic operational cycles and characteristics of Navy small arms and machine guns.
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Advancement Handbook for GM3

General GM Skill Area	Small Arms/Security Forces Equipment
<i>A skill</i> you are expected to perform from the General Skill Area above:	Launch Pyrotechnics
<i>Knowledge</i> you should have to perform this skill:	<p>Common pyrotechnic devices currently in use in the Navy:</p> <p>Marine location markers:</p> <ul style="list-style-type: none"> • Mk 58 Mod 0 • Mk 6 <p>Marine illumination markers and pyrotechnic pistol:</p> <ul style="list-style-type: none"> • AN-M37A2 through AN-M39A2 • Mk 1 • Mk 2 • AN-M8 pyrotechnic pistol <p>Distress and hand signals:</p> <ul style="list-style-type: none"> • Mk 13 • Mk 79 Mod 0 and Mod 2 personnel distress signal kits
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Pyrotechnic, Screening, Marking, and Countermeasure Devices (NAVSEA SW020AC-SAF-020) • Gunner's Mate, Chap 1 (NAVEDTRA 12443)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	<ul style="list-style-type: none"> • Common pyrotechnic devices used in the Navy

Advancement Handbook for GM3

General GM Skill Area	Electrical/Electronic Maintenance
A <i>skill</i> you are expected to perform from the General Skill Area above:	Troubleshoot Electrical/Electronic Equipment
Knowledge you should have to perform this skill:	<p>Theory:</p> <ul style="list-style-type: none"> • Ohm's law • How to solve for unknown quantities of resistance, current, and voltage • How to solve for total capacitance in a circuit • Open and short circuits • Logic circuits <p>Associated test equipment:</p> <ul style="list-style-type: none"> • Voltmeter • Ammeter • Ohmmeter • Galvanometer • Multimeter <p>Functions of electronic components used in typical missile launchers and gun mounts</p> <ul style="list-style-type: none"> • Indicating lamps • Fuses • Switches • Relays • Circuit breakers • Solenoids • Power supplies • Circuit cards • Transformers • Potentiometers • Connectors <p>Soldering techniques</p>

<p><i>References</i> you should study to gain the knowledge you need to perform this skill:</p>	<ul style="list-style-type: none"> • Navy Electricity and Electronics Training Series, Module 1 (NAVEDTRA 173-01-00-88) • Navy Electricity and Electronics Training Series Module 2 (NAVEDTRA 172-020-00-91) • Navy Electricity and Electronics Training Series Module 3 (NAVEDTRA 172-03-00-93) • Navy Electricity and Electronics Training Series Module 4 (NAVEDTRA 172-04-00-92) • Navy Electricity and Electronics Training Series Module 7 (NAVEDTRA 172-07-00-92) • Navy Electricity and Electronics Training Series Module 13 (NAVEDTRA 172-13-00-94) • Navy Electricity and Electronics Training Series Module 16 (NAVEDTRA 172-16-00-96) • Navy Electricity and Electronics Training Series Module 21 (NAVEDTRA 172-21-00-87) • Gunner's Mate, Chap 5 (NAVEDTRA 12443) • Guided Missile System Mk 13 Mod 4 Chaps 1 Vol 1 Parts 1 (NAVSEA OP4470)
<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>Basic electricity and electronics theory:</p> <ul style="list-style-type: none"> • Solving for unknown quantities • Logic circuits • Test equipment • Electronics components and there function • Soldering techniques

Advancement Handbook for GM3

General GM Skill Area	General Maintenance (Hydraulics, Pneumatics, Etc)
A <i>skill</i> you are expected to perform from the General Skill Area above:	Inspect Missile Launching And Hydraulic Systems
Knowledge you should have to perform this skill:	<p>Hydraulic Systems:</p> <ul style="list-style-type: none"> • Properties of hydraulic fluids • The basic hydraulic sitemaps components and use for missile launchers and gun mounts • Tools <p>Hydraulic-Mechanical Components:</p> <ul style="list-style-type: none"> • Directional control valve • Solenoid-operated pilot valve • Metering valve • Shutoff valve • Orifice • Accumulator charging valve assembly • Electro hydraulic servo valve • Header tank • Main supply tank • Hydraulic pump • Hydraulic cylinder • Accumulator • Filter • Power-off brake • Safety relief valve • CAB unit <p>Tools:</p> <ul style="list-style-type: none"> • Pipe cutters • Pipe threading set • Tube cutter • Flaring tool • Screw and tap extractors • Chisels

	<ul style="list-style-type: none"> • Punches • Taps and dies • Gasket cutters • Reamers • Wrenches • Clamps • Hammers, mallets, and maul • Calipers • Micrometers
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Fluid Power (NAVEDTRA 12964) • Gunner's Mate, Chaps 6, 7, 8 (NAVEDTRA 12443) • Use and Care of Hand Tools and Measuring Tools (NAVEDTRA 12085)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	<p>Expect questions on the following:</p> <ul style="list-style-type: none"> • Theory of fluid power • Components association • Tools

Advancement Handbook for GM3

General GM Skill Area	General Maintenance (Hydraulics, Pneumatics, Etc)
<i>A skill</i> you are expected to perform from the General Skill Area above:	Inspect Missile Launching And Gun Mount Pneumatic Systems
<i>Knowledge</i> you should have to perform this skill:	Pneumatic systems components: <ul style="list-style-type: none"> • Manifolds • Charging systems • Reducers • Gauges • Valves • Bottles High pressure air Low pressure air Air flow
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Fluid Power (NAVEDTRA 12964) • Gunner's Mate, Chaps 6, 7, 8 (NAVEDTRA 12443)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	Expect questions on: <ul style="list-style-type: none"> • Basic theory on gases • Component association • Basic diagrams

Advancement Handbook for GM3

General GM Skill Area	General Maintenance (Hydraulics, Pneumatics, Etc)
<i>A skill</i> you are expected to perform from the General Skill Area above:	Adjust Mechanical Linkages
<i>Knowledge</i> you should have to perform this skill:	Basic mechanical devices used in ordnance equipment: <ul style="list-style-type: none"> • Cams • Gears • Levers • Linkages • Bearings
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Basic Machines (NAVEDTRA 12199) • Fluid Power (NAVEDTRA 12964) • Gunner's Mate, Chap 4 (NAVEDTRA 12443)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	<ul style="list-style-type: none"> • The operating principles of mechanical devices used in ordnance equipment

Advancement Handbook for GM3

General GM Skill Area	Magazine And Suppression Systems Maintenance/Operation
<i>A skill</i> you are expected to perform from the General Skill Area above:	Inspect Magazine Areas
<i>Knowledge</i> you should have to perform this skill: (Daily Inspections,	Types of shipboard magazines: <ul style="list-style-type: none"> • Primary • Ready service • Ready-service stowage Daily Inspections: <ul style="list-style-type: none"> • Magazine temperatures • Cooling and ventilation systems, water injection pressure verification, and so forth • Know the procedures for securing CO₂ systems
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Guided Missile System Mk 13 Mod 4 Vol 1, Part 2 (NAVSEA OP4470) • Ammunition Afloat, Chaps 2, 3 (OP4) • Ordnance Safety Precautions (NAVSEA OP3347) • Gunner's Mate, Chap 2 (NAVEDTRA 12443)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	<ul style="list-style-type: none"> • Magazine readiness for shipboard magazines • Inspection criteria; security locks, and so forth

Advancement Handbook for GM3

General GM Skill Area	Magazine And Suppression Systems Maintenance/Operation
<i>A skill</i> you are expected to perform from the General Skill Area above:	Clean And Inspect Sprinkler System Valves
<i>Knowledge</i> you should have to perform this skill:	<p>Purpose and function of the shipboard magazine sprinkler</p> <p>Automatic control system:</p> <ul style="list-style-type: none"> • Pneumatically released pilot valve • Heat sensing devises • Transmission lines <p>Hydraulic Control Systems:</p> <ul style="list-style-type: none"> • Local and remote control valves • Inline check valves • Hydraulically operated check valves • Main sprinkler valve • Drain lines • Orifices plates • Strainers <p>Alarms:</p> <ul style="list-style-type: none"> • F • FH • FD
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Description, Operation and Maintenance for Magazine Sprinkling Systems (S9522-AA-HBK-010) • Gunner's Mate, Chap 2 (NAVEDTRA 12443)

<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<ul style="list-style-type: none"> • Components of the magazine sprinkler system • Purpose of these components and how they function with other components.
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Advancement Handbook for GM3

General GM Skill Area	Magazine And Fire Suppression Systems Maintenance/Operations
<i>A skill</i> you are expected to perform from the General Skill Area above:	Clean And Inspect System Piping
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Flexible hoses, transmission tubing, and drain lines • Flow of the open and closed loop system of the operating circuit for the shipboard magazine sprinkler system
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Description, Operation and Maintenance for Magazine Sprinkling Systems (S9522-AA-HBK-010)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	Control system piping and arrangement: <ul style="list-style-type: none"> • Flexible hoses • Transmission tubing • Drain lines • Open loop • Closed loop

Advancement Handbook for GM3

General GM Skill Area	Magazine And Fire Suppression Systems Maintenance/Operations
<i>A skill</i> you are expected to perform from the General Skill Area above:	Operate Shipboard Magazine And Suppression Systems
<i>Knowledge</i> you should have to perform this skill:	<p>Purpose and function of water injection systems:</p> <ul style="list-style-type: none"> • Compression tank • Water injector nozzles • Valves • Piping • Operation <p>Purpose and function of carbon dioxide (CO₂) systems:</p> <ul style="list-style-type: none"> • HSDs • Transmission lines • Supply cylinders • Pneumatic control heads • Cylinder valve and discharge heads • Discharge nozzles • Shutout valves <p>Purpose and function of the deluge system:</p> <ul style="list-style-type: none"> • Fresh water accumulator tank • Launch sequencer • Valves
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Gunner's Mate, Chap 8 (NAVEDTRA 12443) • Guided Missile System Mk 13 Mod 4, Vol 1, Part 2 (NAVSEA OP4470) • Guided Missile System Mk 26 Mod 0-5 Chaps 1 and 2 (SW394-HO-MMO-020/GMLS)

	<ul style="list-style-type: none"> • Vertical Launching System Mk 41 Chap 2 (SW394-AF-MMO-020/VLS)
<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<ul style="list-style-type: none"> • Basic fire suppression systems used in the fleet

Part 2

Advancement Handbook for GM2

Advancement Handbook for GM2

General GM Skill Area	Weapon Systems Operations
A <i>skill</i> you are expected to perform from the General Skill Area above:	Alignment Of Gun And Missile Batteries
<i>Knowledge</i> you should have to perform this skill:	Battery Alignment: <ul style="list-style-type: none"> • System • Shipboard • Mount • Radar • Tools • Tram and bench mark
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Technical Manual for Theory of Combat Systems Alignment (SW225-AO-MMA-010/OP762) • Gunner's Mate, Chap 11 (NAVEDTRA 12443)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	<ul style="list-style-type: none"> • Basic fundamentals of alignment principles • Battery alignment

Advancement Handbook for GM2

General GM Skill Area	Weapon Systems Operations
<i>A skill you are expected to perform from the General Skill Area above:</i>	Monitor Emergency Firings
<i>Knowledge you should have to perform this skill:</i>	<ul style="list-style-type: none"> • Misfire procedures on gun mounts • Hot gun • Cold gun • Dud and hang fire procedures for missile launchers
<i>References you should study to gain the knowledge you need to perform this skill:</i>	<ul style="list-style-type: none"> • Guided Missile System Mk 13 Mod 4 Chaps 1, 2 and 3, Vol 1, Parts 1 and 2 (NAVSEA OP 4470) • Guided Missile System Mk 26 Mod 0-5 Chaps 1 and 2 (SW394-HO-MMO-020/GMLS) • Gun Mount, 5 Inch, 54-Caliber, Mk 45 Mod 2, Chaps 1 and 2, Vol 1, Part 1 (SW323-F2-MMO-010/GM) • Gun Mount, 5 Inch, 54-Caliber, Mk 45 Mod 2, Chaps 7, 8, 9, 10, and 11, Vol 2, Part 1 (SW323-F2-MMO-040/GM) • Gun Mount, 76- MM, 62-Caliber, Mk 75 Mods 0 and 1, Chaps 1 through 6 (SW314-AO-MMM-A10/GM) Mk 75 0-1 and chaps 7 through 10 (SW314-AO-MMM-A20/Mk 75) • Gunner's Mate, Chap 8 (NAVEDTRA 12443) • Clearing of Live Ammunition from Guns (W300-BC-SAF-010)

<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>Expect questions on:</p> <ul style="list-style-type: none">• Misfire procedures on gun mounts• Hot gun• Cold gun• Dud and hang fire procedures for missile• Launchers
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Advancement Handbook for GM2

General GM Skill Area	Weapon Systems/Components Maintenance
<i>A skill</i> you are expected to perform from the General Skill Area above:	Repair And Replace GML Mechanical Components
<i>Knowledge</i> you should have to perform this skill:	<p>Mechanical components of the GMLS and VLS launching group:</p> <ul style="list-style-type: none"> • Firing cutout assemblies • Loader • Carriage • Hoist • RSR • Guide • Strikedown • Fin openers • Train and elevation power drives • Stand • Magazine • Base • Standard modules • System module • Strikedown module • Plenum chamber • Heating and cooling
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Guided Missile System Mk 13 Mod 4 Chaps 1, 2 and 3, Vol 1, Parts 1 and 2 (NAVSEA OP4470) • Guided Missile System Mk 26 Mod 0-5 Chaps 1 and 2 (SW394-HO-MMO-020/GMLS) • Gunner's Mate, Chaps 7, 8 (NAVEDTRA 12443)

	<ul style="list-style-type: none"> • Vertical Launching System Mk 41 Chap 2 (SW394-AF-MMO-020/VLS)
<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<ul style="list-style-type: none"> • Primary functions and descriptions of guided missile launchers and vertical launchers

Advancement Handbook for GM2

General GM Skill Area	Weapon Systems/Components Maintenance
A <i>skill</i> you are expected to perform from the General Skill Area above:	Replace EC Panel Components
<i>Knowledge</i> you should have to perform this skill:	<p>Launching system and Gun Mount Control Panels for the following systems:</p> <ul style="list-style-type: none"> • Mk 13 Mod 4 GMLS • Mk 26 GMLS • Mk 41 VLS • Mk 75 Gun Mount • Mk 45 Gun Mount
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Guided Missile System Mk 13 Mod 4 Chaps 1, 2 and 3, Vol 1, Parts 1 and 2 (NAVSEA OP4470) • Guided Missile System Mk 26 Mod 0-5 Chaps 1 and 2 (SW394-HO-MMO-020/GMLS) • Gun Mount, 5 Inch, 54-Caliber, Mk 45 Mod 2, Chaps 1 and 2, Vol 1, Part 1 (SW323-F2-MMO-010/GM) • Gun Mount, 5 Inch, 54-Caliber, Mk 45 Mod 2, Chaps 7, 8, 9, 10, and 11, Vol 2, Part 1 (SW323-F2-MMO-040/GM) • Gun Mount, 76- MM, 62-Caliber, Mk 75 Mods 0 and 1, Chaps 1 through 6 (SW314-AO-MMM-A10/GM) • Mk 75 0-1 and chaps 7 through 10 (SW314-AO-MMM-A20/Mk 75) • Gunner's Mate, Chaps 6, 7, 8 (NAVEDTRA 12443) • Vertical Launching System Mk 41, Chap 2 (SW394-AF-MMO-020/VLS)

<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<ul style="list-style-type: none">• The general description of electrical control panel components
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Advancement Handbook for GM2

General GM Skill Area	Weapon Systems/Components Maintenance
A <i>skill</i> you are expected to perform from the General Skill Area above:	Repair And Replace Gun Mount Mechanical Components
Knowledge you should have to perform this skill:	<p>Major components of Gun Mounts:</p> <ul style="list-style-type: none"> • Train and elevation • Fuze setters • Hoist • Screw feeder (Mk 75) • Motors • Revolving magazine (Mk 75) • Brakes • Loader drums • Transfer tray • Cradle • Rammer • Breech block • Gas ejector • Recoil and counter recoil • Empty case ejector • Slide • Barrel • Shields

<p><i>References</i> you should study to gain the knowledge you need to perform this skill:</p>	<ul style="list-style-type: none"> • Gun Mount, 5 Inch, 54-Caliber, Mk 45 Mod 2, Chaps 1 and 2, Vol 1, Part 1 (SW323-F2-MMO-010/GM) • Gun Mount, 5 Inch, 54-Caliber, Mk 45 Mod 2, Chaps 7, 8, 9, 10, and 11, Vol 2, Part 1 (SW323-F2-MMO-040/GM) • Gun Mount, 76- MM, 62-Caliber, Mk 75 Mods 0 and 1, Chaps 1 through 6 (SW314-AO-MMM-A10/GM) • Mk 75 0-1 and chaps 7 through 10 (SW314-AO-MMM-A20/Mk 75) • Gunner's Mate, Chaps 6, 7, 8 (NAVEDTRA 12443)
<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<ul style="list-style-type: none"> • Major components of gun mounts

Advancement Handbook for GM2

General GM Skill Area	Weapon Systems/Components Maintenance
<i>A skill</i> you are expected to perform from the General Skill Area above:	Install Alignment Equipment On GML And Gun Mounts
<i>Knowledge</i> you should have to perform this skill:	Procedures for alignment of Gun Mounts: <ul style="list-style-type: none"> • Tram • Bench mark • Star checks • Understand the fundamentals of battery alignment
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Theory of Combat System Alignment (SW225-AO-MMA -010/OP762 ALIGN THEORY) • Gunner's Mate, Chap 11 (NAVEDTRA 12443)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	<ul style="list-style-type: none"> • Basic fundamentals of alignment principles • Battery alignment

Advancement Handbook for GM2

General GM Skill Area	Weapon Handling/Maintenance
A <i>skill</i> you are expected to perform from the General Skill Area above:	Inspect Missile Handling Equipment
Knowledge you should have to perform this skill:	<p>Mk 13 Mod 4 GMLS:</p> <ul style="list-style-type: none"> • Mk 6 Mods 2&4 missile transfer dolly • Mk 13 Mod 4 strikedown equipment <p>Mk 26 GMLS:</p> <ul style="list-style-type: none"> • GMLS strikedown/intertransfer system <p>Mk 41 VLS:</p> <ul style="list-style-type: none"> • Five cell strikedown module • Canisters • Replenishment handling system equipment <p>Miscellaneous:</p> <ul style="list-style-type: none"> • Handling bands, slings • Hoisting beams • Mk 45 handlift truck • Missile stowage adapters • Stowage cradles • Crates • Pallets and adapters
References you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Guided Missile System Mk 13 Mod 4 Vol 1, Part 2 (NAVSEA OP4470) • Guided Missile System Mk 26 Mod 0-5 Chaps 1 and 2 (SW394-HO-MMO-020/GMLS) • Vertical Launching System Mk 41 Chap 2 (SW394-AF-MMO-020/VLS) • Handling and Stowage of Naval Ordnance Vols. 1 and 2 (Aboard Ammunition Ships) (NAVSEA OP3206) • Approved Handling Equipment for Weapons and Explosives (OP-2173)

	<ul style="list-style-type: none"> • Gunner's Mate, Chap 2 (NAVEDTRA 12443) • Inspection Requirements for Receipt, Segregation, Storage and Issue of Navy and Marine Corps Conventional Ammunition (Receipt, Storage, and Issue Sentencing) (NAVSEA TW010-AC-ORD-010)
<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<ul style="list-style-type: none"> • Approved handling equipment used on board ship and ashore

Advancement Handbook for GM2

General GM Skill Area	Ordnance /Component Maintenance
<i>A skill</i> you are expected to perform from the General Skill Area above:	Assemble And Disassemble Missiles
<i>Knowledge</i> you should have to perform this skill:	Types of missiles stowed in magazines: <ul style="list-style-type: none"> • Categories of missiles (Table 9-1, Gunner's Mate (NAVEDTRA 12443) • Capabilities of missiles • Major sections of guided missile • Color code of missiles
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Gunner's Mate, Chap 9 (NAVEDTRA 12443) • Identification of Ammunition (SW010-AF-ORD-010) • Safety Precautions for Standard and VLS Standard Missiles (SW800-AC-SAF-010)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	<ul style="list-style-type: none"> • Categories of missiles • Capabilities of missiles • Major sections of guided missiles • Color code of missiles

Advancement Handbook for GM2

General GM Skill Area	Small Arms/Security Forces Equipment
<i>A skill</i> you are expected to perform from the General Skill Area above:	Conduct Small Arms Familiarization Firings
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Small arms familiarization • Safety requirements for these weapons while on the firing range
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • 45 Cal Pistol (TM 9-1005-211-12) • M14 Rifle (TM9-1005-223-20) • .50 Cal Machine Gun (TM9-1005-213-10) • M60 Machine Gun (TM9-1005-224-24) • .38 S/M Wesson (1005-206-14&P-1) • 40-MM Grenade Launcher (FM23-31) • 25MM M242 (SW360-AB-MMO-010) • OPNAVINST 3591.1B • Gunner's Mate, Chap 3 (NAVEDTRA 12443)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	<ul style="list-style-type: none"> • Range safety and weapon familiarization

Advancement Handbook for GM2

General GM Skill Area	Electrical/Electronic Maintenance
A <i>skill</i> you are expected to perform from the General Skill Area above:	Install Synchros
<i>Knowledge</i> you should have to perform this skill:	Synchro fundamentals: <ul style="list-style-type: none"> • Classification • Military standard synchro code • Schematic symbols • Construction • Theory of operation • Troubleshooting • Installation
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Gunner's Mate, Chap 5 (NAVEDTRA 12443) • Navy Electricity and Electronics Training Series, Module 15 (NAVEDTRA B72-15-00-92)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	Synchro fundamentals: <ul style="list-style-type: none"> • Classification • Military standard synchro code • Schematic symbols • Construction • Theory of operation • Troubleshooting • Installation

Advancement Handbook for GM2

General GM Skill Area	Electrical/Electronic Maintenance
<i>A skill</i> you are expected to perform from the General Skill Area above:	Troubleshoot Electronic And Electrical Malfunctions
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Basic electrical formulas, logic circuits and basic component troubleshooting • Electrical components and there schematic symbols • SOPVS • Electrical cabling • Power supplies • Transformers • Electric motors • Cable connectors • Alarm devices • Sensing devices • Lamps • Switches • Fuses • Battery • Resistors • Capacitors
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Gunner's Mate, Chap 5 (NAVEDTRA 12443) • Navy Electricity and Electronics Training Series, Module 1 (NAVEDTRA 173-01-00-88) • Navy Electricity and Electronics Training Series Module 2 (NAVEDTRA 172-020-00-91) • Navy Electricity and Electronics Training Series Module 3 (NAVEDTRA 172-03-00-93)

	<ul style="list-style-type: none"> • Navy Electricity and Electronics Training Series Module 4 (NAVEDTRA 172-04-00-92) • Navy Electricity and Electronics Training Series Module 7 (NAVEDTRA 172-07-00-92) • Navy Electricity and Electronics Training Series Module 13 (NAVEDTRA 172-13-00-94) • Navy Electricity and Electronics Training Series Module 16 (NAVEDTRA 172-16-00-96) • Navy Electricity and Electronics Training Series Module 21 (NAVEDTRA 172-21-00-87)
<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<ul style="list-style-type: none"> • Basic electrical formulas, logic circuits • Basic component troubleshooting • Electrical components and their schematic symbols

Advancement Handbook for GM2

General GM Skill Area	General Maintenance (Hydraulics, Pneumatics, Etc.)
<i>A skill</i> you are expected to perform from the General Skill Area above:	Troubleshoot Hydraulic And Pneumatic Components
<i>Knowledge</i> you should have to perform this skill:	<p>Components of a basic hydraulic and pneumatic system:</p> <ul style="list-style-type: none"> • Pumps • Fluid lines • Sealing devices • Pressure control devices • Actuators • Reservoirs, strainers, filters, and accumulators • Mechanical (gears, cams, springs, linkages, couplings)
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Fluid Power (NAVEDTRA 12964) • Basic Machines (NAVEDTRA 12199) • Gunner's Mate, Chaps 6, 7, 8 (NAVEDTRA 12443)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	<ul style="list-style-type: none"> • Areas in basic hydraulic and pneumatics • Components maintenance

Advancement Handbook for GM2

General GM Skill Area	General Maintenance (Hydraulics, Pneumatics, Etc.)
A <i>skill</i> you are expected to perform from the General Skill Area above:	Repair Damaged Sealing Surfaces, Mating Areas, And Threads
Knowledge you should have to perform this skill:	<p>Components maintenance:</p> <ul style="list-style-type: none"> • Cutting internal and external treads • Damaged sealing surfaces, mating areas and threads • Cut, flare, and install tubing • Cut, bend, and install piping <p>Tools for repairing tubing and piping and sealing surfaces:</p> <ul style="list-style-type: none"> • Pipe cutters • Pipe threading set • Tube cutter • Flaring tool • Screw and tap extractors • Chisels • Punches • Taps and dies • Gasket cutters • Reamers • Wrenches • Clamps • Hammers, mallets, and maul • Calipers • Micrometers
References you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Fluid Power (NAVEDTRA 12964) • Gunner's Mate, Chaps 6, 7, 8 (NAVEDTRA 12443) • Use and Care of Hand Tools and Measuring Tools (NAVEDTRA 12085)

<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<ul style="list-style-type: none">• Basic repairs• Tools to repair damaged internal and external threads and sealing surfaces
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Advancement Handbook for GM2

General GM Skill Area	Magazine and Suppression Systems Maintenance/Operation
<i>A skill</i> you are expected to perform from the General Skill Area above:	Repair Fire Suppression Systems And Components
<i>Knowledge</i> you should have to perform this skill:	<p>Purpose and function of the shipboard magazine and suppression systems: (Hydraulic, Automatic, Alarm Systems)</p> <ul style="list-style-type: none"> • Be able to identify the various components of the magazine sprinkler system • Purpose and function of water injection systems • Purpose and function of carbon dioxide (CO₂) systems • Purpose and function of the deluge system
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Gunner's Mate, Chap 8 (NAVEDTRA 12443) • Guided Missile System Mk 13 Mod 4, Vol 1, Part 2 (NAVSEA OP4470) • Guided Missile System Mk 26 Mod 0-5 Chaps 1 and 2 (SW394-HO-MMO-020/GMLS) • Vertical Launching System Mk 41 Chap 2 (SW394-AF-MMO-020/VLS)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	<ul style="list-style-type: none"> • Fire suppression systems listed above

Advancement Handbook for GM2

General GM Skill Area	Technical Administration
<i>A skill</i> you are expected to perform from the General Skill Area above:	Interpret Drawings (Blueprints, Schematics)
<i>Knowledge</i> you should have to perform this skill:	Blueprint reading <ul style="list-style-type: none"> • Technical sketching • Projections and views • Machine drawings • Electrical and electronics prints
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Blueprint Reading and Sketching (NAVEDTRA 12014) • Gunner's Mate, Chap 12 (NAVEDTRA 12443)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	Blueprint reading <ul style="list-style-type: none"> • Technical sketching • Projections and views • Machine drawings • Electrical and electronics prints

Advancement Handbook for GM2

General GM Skill Area	Technical Administration
<i>A skill</i> you are expected to perform from the General Skill Area above:	Review Weight Test Renewal Data
<i>Knowledge</i> you should have to perform this skill:	Inspection and testing requirements: <ul style="list-style-type: none"> • Recording data • Static load test • Dynamic load test • Rated load test
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Shipboard Ammunition Handling and Stowage (Chapter 700)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	<ul style="list-style-type: none"> • Recording data • Static load test • Dynamic load test • Rated load test

Part 3

Advancement Handbook for GM1

Advancement Handbook for GM1

General GM Skill Area	Weapon Systems Operations
<i>A skill</i> you are expected to perform from the General Skill Area above:	Missile And Gun Batteries
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Battery alignment • Fire control systems
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Technical Manual for Theory of Combat Systems Alignment (SW225-AO-MMA-010/OP762) • Gunner's Mate, Chap 11 (NAVEDTRA 12443)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	<ul style="list-style-type: none"> • Battery alignment • Fire control systems

Advancement Handbook for GM1

General GM Skill Area	Weapon Systems Operations
<i>A skill</i> you are expected to perform from the General Skill Area above:	Analyze Barrel Wear Test Data
<i>Knowledge</i> you should have to perform this skill:	Analyzing barrel wear STAR checks Gauges: <ul style="list-style-type: none"> • Bore plug • Bore erosion Cleaning tools
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Gunner's Mate, Chap 11 (NAVEDTRA 12443) • Serviceability of Naval Gun Barrels (SW300-BB-GTP-010)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	<ul style="list-style-type: none"> • Gun barrel maintenance

Advancement Handbook for GM1

General GM Skill Area	Weapon Systems/Components Maintenance
<i>A skill</i> you are expected to perform from the General Skill Area above:	Overhaul GML And Gun Mount Mechanical Components
<i>Knowledge</i> you should have to perform this skill:	<p>Mechanical components of the GMLS and VLS launching group:</p> <ul style="list-style-type: none"> • Mk 13 Mod 4 GMLS • Mk 26 GMLS • Mk 41 VLS <p>Mechanical components of gun mounts</p> <ul style="list-style-type: none"> • Mk 75 Gun Mount • Mk 45 Gun Mount
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Guided Missile System Mk 13 Mod 4 Chaps 1, 2, and 3, Vol 1, Parts 1 and 2 (NAVSEA OP 4470) • Guided Missile System Mk 26 Mod 0-5 Chaps 1 and 2 (SW394-HO-MMO-020/GMLS) • Gun Mount, 5 Inch, 54-Caliber, Mk 45 Mod 2, Chaps 1 and 2, Vol 1, Part 1 (SW323-F2-MMO-010/GM) • Gun Mount, 5 Inch, 54-Caliber, Mk 45 Mod 2, Chaps 7, 8, 9, 10, and 11, Vol 2, Part 1 (SW323-F2-MMO-040/GM) • Gun Mount, 76- MM, 62-Caliber, Mk 75 Mods 0 and 1, Chaps 1 through 6 (SW314-AO-MMM-A10/GM) • Mk 75 0-1 and chaps 7 through 10 (SW314-AO-MMM-A20/Mk 75) • Vertical Launching System Mk 41 Chap 2 (SW394-AF-MMO-020/VLS)

	<ul style="list-style-type: none"> • Gunner's Mate, Chaps 6, 7, 8 (NAVEDTRA 12443)
<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<ul style="list-style-type: none"> • Major components of gun mounts and missile launchers

Advancement Handbook for GM1

General GM Skill Area	Weapons Handling/Maintenance
<i>A skill you are expected to perform from the General Skill Area above:</i>	Monitor Handling Of Missiles And Missile Components
<i>Knowledge you should have to perform this skill:</i>	<ul style="list-style-type: none"> • On-load and off-load plans • Monitor handling of ammunition, pyrotechnics, and explosives • Monitor handling of missiles and containers • Receipt processing • Containers • Handling equipment • Replenishment methods • Conventional explosive handling and stowage programs
<i>References you should study to gain the knowledge you need to perform this skill:</i>	<ul style="list-style-type: none"> • Guided Missile System Mk 13 Mod 4 Vol 1, Part 2 (NAVSEA OP 4470) • Guided Missile System Mk 26 Mod 0-5 Chaps 1 and 2 (SW394-HO-MMO-020/GMLS) • Vertical Launching System Mk 41 Chap 2 (SW394-AF-MMO-020/VLS) • Handling and Stowage of Naval Ordnance Vols. 1 and 2, Aboard Ammunition Ships (NAVSEA OP3206) • Gunner's Mate, Chaps 2, 8 (NAVEDTRA 12443) • COMNAVSURFLANT 8023.4G • SPCC 8010.12 • Ammunition Afloat, Chaps 2, 3 (OP4) • Ordnance Safety Precautions (NAVSEA OP 3347)

	<ul style="list-style-type: none"> • Inspection Requirements for Receipt, Segregation, Storage and Issue of Navy and Marine Corps Conventional Ammunition (Receipt, Storage, and Issue Sentencing) (NAVSEA TW010-AC-ORD-010)
<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>Missile handling information</p> <ul style="list-style-type: none"> • Ammunition, pyrotechnics, and explosives • Handling of missiles and containers • Receipt processing • Containers • Handling equipment • Replenishment methods • Conventional explosive handling and stowage programs

Advancement Handbook for GM1

General GM Skill Area	Ordnance /Component Maintenance
<i>A skill</i> you are expected to perform from the General Skill Area above:	Perform Missile Receipt And Transfer Inspections
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Issue and receipt of naval missiles
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Gunner's Mate, Chaps 2, 9 (NAVEDTRA 12443) • Identification of Ammunition (SW010-AF-ORD-010) • Safety Precautions for Standard and VLS Standard Missiles (SW800-AC-SAF-010) • Ammunition Afloat, Chaps 2, 3 (OP4) • Ordnance Safety Precautions (NAVSEA OP 3347) • COMNAVSURFLANT 8023.4G • Inspection Requirements for Receipt, Segregation, Storage and Issue of Navy and Marine Corps Conventional Ammunition (Receipt, Storage, and Issue Sentencing) (NAVSEA TW010-AC-ORD-010)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	Missile handling information : <ul style="list-style-type: none"> • Missiles • Ammunition Conventional explosive handling and stowage programs

Advancement Handbook for GM1

General GM Skill Area	Ordnance/Component Maintenance
<i>A skill</i> you are expected to perform from the General Skill Area above:	Inspect Ordnance Items For Damage
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Characteristics and classification of explosives, propellants and pyrotechnics stowed in magazines • Classification, components, and features of Navy gun ammunition • Visual surveillance of ammunition
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Navy Gun Ammunition (SW030-AA-MMO-010) • Identification of Ammunition (SW010-AF-ORD-010) • Pyrotechnic Screening, Marking, and Countermeasure Devices (NAVSEA SW020AC-SAF-020) • Gunner's Mate, Chaps 1, 2 (NAVEDTRA 12443) • Ammunition Afloat, Chaps 2, 3, 4, 5, 6 (OP4) • Ordnance Safety Precautions (NAVSEA OP 3347)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	<ul style="list-style-type: none"> • Characteristics and classification of explosives, propellants, and pyrotechnics stowed in magazines • Proper stowage arrangements for these munitions

Advancement Handbook for GM1

General GM Skill Area	General Maintenance (Hydraulics, Pneumatics, Etc.)
<i>A skill</i> you are expected to perform from the General Skill Area above:	Inspect Pneumatic And Hydraulic Equipment Modifications And Changes
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Classification, type, and operation of hydraulic pumps • Classification and operation of valves • Types and purposes of sealing devices • Major components in a fluid power system • Actuators • Diagrams • Characteristics, and safety dealing with pneumatic gases
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Fluid Power (NAVEDTRA 12964) • Basic Machines (NAVEDTRA 12199) • Gunner's Mate, Chaps 6, 7, 8 (NAVEDTRA 12443)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	<ul style="list-style-type: none"> • Classification, type and operation of hydraulic pumps • Classification and operation of valves • Types and purposes of sealing devices • Major components in a fluid power system • Actuators • Diagrams • Characteristics, and safety dealing with pneumatic gases

Advancement Handbook for GM1

General GM Skill Area	Magazine and Fire Suppression Systems Maintenance/Operation
<i>A skill</i> you are expected to perform from the General Skill Area above:	Test Operate Dry Type Magazine Sprinkler Systems, CO ₂ Fire Suppression Systems, And Water Injection Systems
<i>Knowledge</i> you should have to perform this skill:	Physical and functional description: <ul style="list-style-type: none"> • Carbon dioxide (CO₂) systems • Water injection systems • Dry-type sprinkler systems • Deluge system
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Description, Operation and Maintenance for Magazine Sprinkling Systems (S9522-AA-HBK-010) • Gunner's Mate, Chaps 2, 8 (NAVEDTRA 12443) • Guided Missile System Mk 13 Mod 4, Vol 1, Part 2 (NAVSEA OP 4470) • Guided Missile System Mk 26 Mod 0-5 Chaps 1 and 2 (SW394-HO-MMO-020/GMLS) • Vertical Launching System Mk 41 Chap 2 (SW394-AF-MMO-020/VLS)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	<ul style="list-style-type: none"> • Fire suppression systems

Advancement Handbook for GM1

General GM Skill Area	Magazine And Fire Suppression Systems Maintenance/Operation
<i>A skill</i> you are expected to perform from the General Skill Area above:	Inventory Security Locks And Components
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Locking devices for magazines
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Naval Psychical Security (OPNAVINST 5530.13B)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	<ul style="list-style-type: none"> • Types of security locks for magazines

Advancement Handbook for GM1

General GM Skill Area	Technical Administration
<i>A skill</i> you are expected to perform from the General Skill Area above:	Requisition Ammunition
<i>Knowledge</i> you should have to perform this skill:	Review and prepare: <ul style="list-style-type: none"> • Standardized conventional ammunition Automated inventory records • ATRs • Master stock records cards • Ammunition reclassification files • Ammunition information notices • National item identification number cards • Ammunition lot and location cards • Fleet optical scanning ammunition marking systems
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • SPCC 8010.12 • Gunner's Mate, Chap 2 (NAVEDTRA 12443)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	<ul style="list-style-type: none"> • Ammunition reports

Advancement Handbook for GM1

General GM Skill Area	Electronic and Electrical Malfunctions
<i>A skill</i> you are expected to perform from the General Skill Area above:	Basic Electrical Formulas, Logic Circuits And Basic Component Troubleshooting
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Basic electrical formulas, logic circuits • Basic component troubleshooting
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Navy Electricity and Electronics Training Series, Module 1 (NAVEDTRA 173-01-00-88) • Navy Electricity and Electronics Training Series Module 2 (NAVEDTRA 172-020-00-91) • Navy Electricity and Electronics Training Series Module 3 (NAVEDTRA 172-03-00-93) • Navy Electricity and Electronics Training Series Module 4 (NAVEDTRA 172-04-00-92) • Navy Electricity and Electronics Training Series Module 7 (NAVEDTRA 172-07-00-92) • Navy Electricity and Electronics Training Series Module 13 (NAVEDTRA 172-13-00-94) • Navy Electricity and Electronics Training Series, Module 15 (NAVEDTRA B72-15-00-92) • Navy Electricity and Electronics Training Series Module 16 (NAVEDTRA 172-16-00-96) • Navy Electricity and Electronics Training Series Module 21 (NAVEDTRA 172-21-00-87) • Gunner's Mate, Chap 5

	(NAVEDTRA 12443)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	<ul style="list-style-type: none"> • Basic electrical formulas, logic circuits • Basic component troubleshooting

Part 4

Advancement Handbook for GMC

Advancement Handbook for GMC

General GM Skill Area	Weapon Systems Operations
<i>A skill</i> you are expected to perform from the General Skill Area above:	Analyze Alignment Data
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Alignment principles and procedures
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Technical Manual for Theory of Combat Systems Alignment (SW225-AO-MMA-010/OP762) • Gunner's Mate, Chap 11 (NAVEDTRA 12443)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	<ul style="list-style-type: none"> • Alignment principles and procedures

Advancement Handbook for GMC

General GM Skill Area	Weapon System/Component Maintenance
<i>A skill</i> you are expected to perform from the General Skill Area above:	Inspect Completed Weapon Systems Modernizations, Ordalts, And Field Changes
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • System logs and records • Casualty reports <p>Mechanical components of the GMLS and VLS launching group</p> <ul style="list-style-type: none"> • Mk 13 Mod 4 • Mk 26 • Mk 41 <p>Mechanical components of gun mounts</p> <ul style="list-style-type: none"> • Mk 75 Gun Mount • Mk 45 Gun Mount
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Guided Missile System Mk 13 Mod 4 Chaps 1, 2 and 3, Vol 1, Parts 1 and 2 (NAVSEA OP 4470) • Guided Missile System Mk 26 Mod 0-5 Chaps 1 and 2 (SW394-HO-MMO-020/GMLS) • Gun Mount, 5 Inch, 54-Caliber, Mk 45 Mod 2, Chaps 1 and 2, Vol 1, Part 1 (SW323-F2-MMO-010/GM) • Gun Mount, 5 Inch, 54-Caliber, Mk 45 Mod 2, Chaps 7, 8, 9, 10, and 11, Vol 2, Part 1 (SW323-F2-MMO-040/GM) • Gun Mount, 76- MM, 62-Caliber, Mk 75 Mods 0 and 1, Chaps 1 through 6 (SW314-AO-MMM-A10/GM) • Mk 75 0-1 and chaps 7 through 10 (SW314-AO-MMM-A20/Mk 75) • Vertical Launching System Mk 41 Chap 2 (SW394-AF-MMO-020/VLS)

	<ul style="list-style-type: none"> • Gunner's Mate, Chap 12 (NAVEDTRA 12443) • Ship's Maintenance Material Management Manual (3-M) 4790.4
<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<ul style="list-style-type: none"> • System logs and records • Casualty reports • Mechanical components of the GMLS and VLS launching group • Mechanical components of gun mounts • Mk 75 Gun Mount • Mk 45 Gun Mount

Advancement Handbook for GMC

General GM Skill Area	Weapons Handling/Maintenance
<i>A skill</i> you are expected to perform from the General Skill Area above:	Conduct Ammunition Handling Safety Briefs
<i>Knowledge</i> you should have to perform this skill:	Procedures for: <ul style="list-style-type: none"> • On-load missiles • Off-load missiles • On-load of ammunition • Off-load of ammunition • Handling area • Containers • Handling equipment • Replenishment • Conventional weapons explosive handling and stowage program
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Guided Missile System Mk 13 Mod 4 Vol 1, Part 2 (NAVSEA OP 4470) • Guided Missile System Mk 26 Mod 0-5 Chaps 1 and 2 (SW394-HO-MMO-020/GMLS) • Vertical Launching System Mk 41 Chap 2 (SW394-AF-MMO-020/VLS) • Handling and Stowage of Naval Ordnance Vols. 1 and 2, Aboard Ammunition Ships (NAVSEA OP3206) • Gunner's Mate, Chaps 2, 8 (NAVEDTRA 12443) • COMNAVSURFLANT 8023.4G • SPCC 8010.12 • Ammunition Afloat, Chap 2, 3 (OP4) • Ordnance Safety Precautions (NAVSEA OP 3347)

	<ul style="list-style-type: none"> • Inspection Requirements for Receipt, Segregation, Storage and Issue of Navy and Marine Corps Conventional Ammunition (Receipt, Storage, and Issue Sentencing) (NAVSEA TW010-AC-ORD-010)
<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>Missile handling information:</p> <ul style="list-style-type: none"> • Safety • Missiles • Ammunition • Handling equipment • Stowage <p>Conventional weapons explosives handling and stowage</p>

Advancement Handbook for GMC

General GM Skill Area	Ordnance/Component Maintenance
<i>A skill</i> you are expected to perform from the General Skill Area above:	Dispose Of Damaged Explosive Components
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Characteristics and classification of explosives, propellants and pyrotechnics stowed in magazines: • Classification, components, and features of Navy gun ammunition • Visual surveillance of ammunition • Disposal of damaged deteriorated ammunition, explosives and other related hazardous materials
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Navy Gun Ammunition (SW030-AA-MMO-010) • Identification of Ammunition (SW010-AF-ORD-010) • Pyrotechnic Screening, Marking, and Countermeasure Devices (NAVSEA SW020AC-SAF-020) • Gunner's Mate, Chaps 1,2 (NAVEDTRA 12443) • Ammunition Afloat, Chaps 2, 3, 4, 5, 6 (OP4) • Ordnance Safety Precautions (NAVSEA OP 3347)

<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<ul style="list-style-type: none"> • Characteristics and classification of explosives, propellants and pyrotechnics stowed in magazines • Proper stowage arrangements for these munitions • Proper disposal of damaged explosives
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Advancement Handbook for GMC

General GM Skill Area	Small Arms/Security Forces Equipment
<i>A skill</i> you are expected to perform from the General Skill Area above:	Monitor SSDF Exercises
<i>Knowledge</i> you should have to perform this skill:	Small arms familiarization and the safety requirements for these weapons
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • .45 Cal Pistol (TM 9-1005-211-12) • M14 Rifle (TM9-1005-223-20) • .50 Cal Machine Gun (TM9-1005-213-10) • M60 Machine Ggun (TM9-1005-224-24) • .38 S/M Wesson (1005-206-14&P-1) • 40-MM Grenade Launcher (FM23-31) • 25MM M242 (SW360-AB-MMO-010) • Gunner's Mate, Chap 3 (NAVEDTRA 12443)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	<ul style="list-style-type: none"> • Small arms familiarization • Safety requirements for these weapons

Advancement Handbook for GMC

General GM Skill Area	Magazine and Suppression Systems Maintenance/Operation
<i>A skill</i> you are expected to perform from the General Skill Area above:	Perform Magazine Sprinkler System Inspection
<i>Knowledge</i> you should have to perform this skill:	<p>Purpose and function of the shipboard Magazine and suppression systems (hydraulic, automatic, alarm systems)</p> <ul style="list-style-type: none"> • Be able to identify the various components of the magazine sprinkler system • Purpose and function of water injection systems • Purpose and function of carbon dioxide (CO₂) systems • Purpose and function of the deluge system
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • Description, Operation and Maintenance for Magazine Sprinkling Systems (S9522-AA-HBK-010) • Gunner's Mate, Chap 2,8 (NAVEDTRA 12443) • Guided Missile System Mk 13 Mod 4, Vol 1, Part 2 (NAVSEA OP 4470) • Guided Missile System Mk 26 Mod 0-5 Chaps 1 and 2 (SW394-HO-MMO-020/GMLS) • Vertical Launching System Mk 41 Chap 2 (SW394-AF-MMO-020/VLS)

<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<ul style="list-style-type: none">• Fire suppression systems
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Advancement Handbook for GMC

General GM Skill Area	Quality Assurance
<i>A skill you are expected to perform from the General Skill Area above:</i>	Perform Acceptance Inspections On Missiles And Ammunition And Ordnance
<i>Knowledge you should have to perform this skill:</i>	<ul style="list-style-type: none"> • Acceptance inspections on missiles • Acceptance inspections on ammunition and other ordnance • Receipt and transfer inspections • Containers • Handling equipment • Replenishment methods • Conventional explosive handling and stowage programs
<i>References you should study to gain the knowledge you need to perform this skill:</i>	<ul style="list-style-type: none"> • Guided Missile System Mk 13 Mod 4 Vol 1, Part 2 (NAVSEA OP 4470) • Guided Missile System Mk 26 Mod 0-5 Chaps 1 and 2 (SW394-HO-MMO-020/GMLS) • Vertical Launching System Mk 41 Chap 2 (SW394-AF-MMO-020/VLS) • Handling and Stowage of Naval Ordnance Vols. 1 and 2, Aboard Ammunition Ships (NAVSEA OP3206) • Approved Handling Equipment for Weapons and Explosives (OP-2173) • Gunner's Mate, Chap 2 (NAVEDTRA 12443) • Inspection Requirements for Receipt, Segregation, Storage and Issue of Navy and Marine Corps Conventional Ammunition (Receipt, Storage, and Issue Sentencing) (NAVSEA TW010-AC-ORD-010)

<p><i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:</p>	<p>Missile handling information</p> <ul style="list-style-type: none"> • Acceptance inspections on missiles • Acceptance inspections on ammunition and other ordnance • Receipt and transfer inspections • Containers • Handling equipment • Replenishment methods <p>Conventional explosive handling and stowage programs</p>
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Advancement Handbook for GMC

General GM Skill Area	Technical Administration
<i>A skill</i> you are expected to perform from the General Skill Area above:	Update Arms, Ammunition, And Explosives (AA&E) Key Control Logs
<i>Knowledge</i> you should have to perform this skill:	<ul style="list-style-type: none"> • Damage and improper shipment reports • System logs and records • Standardized conventional ammunition automated inventory records • ATRs • Master stock records cards • Ammunition reclassification files • Ammunition information notices • National item identification number cards • Ammunition lot and location cards • Fleet optical scanning ammunition • Marking systems
<i>References</i> you should study to gain the knowledge you need to perform this skill:	<ul style="list-style-type: none"> • SPCC 8010.12 • Gunner's Mate, Chaps 2, 13 (NAVEDTRA 12443)
<i>Exam Expectations.</i> These are subject areas you should know to help you answer exam questions correctly:	<ul style="list-style-type: none"> • Ammunition reports • Logs and records

Appendix A

References Used in This Advancement Handbook

Rating	Short Title	Long Title	Chapters/ Paragraphs	Stocking Point
GM3	FM23-31 40-MM	40-MM Grenade Launcher	1, 2, 3, 4	Note 8
	NAVEDTRA 12085	Use and Care of Hand Tools and Measuring Tools	1-36	Note 1
	NAVEDTRA 12199	Basic Machines	3, 5, 6, 10, 11, 13	Note 1
	NAVEDTRA 12443	Gunner's Mate Training Manual		Note 1
	NAVEDTRA 12964	Fluid Power		Note 1
	NAVSEA TW010-AC-ORD-010	Inspection Requirements for Receipt, Segregation, Storage and Issue of Navy and Marine Corps Conventional Ammunition (Receipt, Storage and Issue Sentencing)	1-6	Note 1
	NAVSEA OP3206 Vol.1	Handling and Stowage of Naval Ordnance Aboard	4	Note 1
	Navy Electricity and Electronics Training Series (NEETS)	Introduction to Matter, Energy, and Direct Current	Module 1	Note 1
	Navy Electricity and Electronics Training Series (NEETS)	Introduction to Alternating Current and Transformers	Module 2	Note 1
	Navy Electricity and Electronics Training Series (NEETS)	Introduction to Circuit Protection, Control, and Measurement	Module 3	Note 1
	Navy Electricity and Electronics Training Series (NEETS)	Introduction to Electrical Conductors, Wiring Techniques, and Schematic Reading	Module 4	Note 1
	Navy Electricity and Electronics Training Series (NEETS)	Introduction to Solid-State Devices and Power Supplies	Module 7	Note 1

Rating	Short Title	Long Title	Chapters/ Paragraphs	Stocking Point
GM3 (Cont)	Navy Electricity and Electronics Training Series (NEETS)	Introduction to Number Systems and Logic Circuits	Module 13	Note 1
	Navy Electricity and Electronics Training Series (NEETS)	Introduction to Test Equipment	Module 16	Note 1
	Navy Electricity and Electronics Training Series (NEETS)	The Technician's Handbook	Module 19	Note 1
	Navy Electricity and Electronics Training Series (NEETS)	Test Methods and Practices	Module 21	Note 1
	OP 4	Ammunition Afloat	2, 3, 4	Note 1
	OP-2173	Approved Handling Equipment for Weapons and Explosives	1, 3, 15, 19, 31, 40, 53, 42	Note 1
	OP-3347	USN Ordnance Safety Precautions	1, 2, 3	Note 1
	OP-3565	Electromagnetic Radiation Hazards	1, 2, 3	Note 1
	OP-4470	Guided Missile Launching System Mk 13 Mod 4, Volume 1	1, 2, 3	Note 1
	S9522-AA-HBK-010	Description, Operation and Maintenance for Magazine Sprinkling Systems	1-5	Note 1
	SW010-AF-ORD-010	Identification of Ammunition	1, 2, 3, 5, 10, 11	Note 1
	SW050-AB-MMA-010	Pyrotechnic, Screening, Marking and Countermeasure Devices	1, 3, 4, 5, 6	Note 1
	SW225-BC-SAF-010	Theory of Combat System Alignment	1, 3, 5	Note 1
	SW300-BC-SAF-010	Clearing of Live Ammunition from Guns	1, 2, 3	Note 1
	SW314-AO-MMM-A10/GM Mk 75 0-1	Gun Mount, 76-MM, 62-Caliber, Mk 75 Mods 0 and 1	1-6	Note 1
	SW314-AO-MMM-A20/GM Mk 75 0-1	Gun Mount, 76-MM, 62-Caliber, Mk 75 Mods 0 and 1	7-10	Note 1

Rating	Short Title	Long Title	Chapters/ Paragraphs	Stocking Point
GM3 (Cont)	SW323-F2-MMO-010/GM	Gun Mount, 5 Inch, 54-Caliber, Mk 45 Mod 2	1, 2	Note 1
	SW323-F2-MMO-040/GM	Gun Mount, 5 Inch, 54-Caliber, Mk 45 Mod 2	7-11	Note 1
	SW350-A1-MMO-010	Description, Operation, and Maintenance Mk 87 Mod 1 Line Throwing Rifle Adapter Kit	1-7	Note 1
	SW360-AB-MMO-010	25MM M242	1, 2, 3, 4, 6	Note 1
	SW394-AF-MMO-020	Vertical Launching System, Mk 41 Mods 0/1/2 Introduction and Description	1, 2	Note 1
	SW394-HO-MMO-020	Guided Missile Launching System Mk 26 Mods 0-5; Description, Operation & Maintenance	1, 2	Note 1
	SW800-AC-SAF-010	Standard Missile SM-1, SM-2MR, and VLS (MR&ER) Guided Missiles		Note 1
	SWO30-AA-MMO-010	Navy Gun Ammunition	1, 2, 3, 4, 7	Note 1
	TM 9-1005-211-12	.45 Cal Pistol	1-4	Note 7
	TM 9-1005-317-10	Pistol, Semiautomatic, 9mm, M9	1, 2, 3, 4	Note 7
	TM 9-1005-319-10	Rifle, M16A2	1	Note 7
	TM9-1005-206-14&P-1	.38 S/M Wesson	1-6	Note 7
	TM9-1005-213-10	.50 Cal Machine Gun	1-4	Note 7
	TM9-1005-223-20	M14 Rifle	1-3	Note 7
	TM9-1005-224-24	M60 Machine Gun	1-5	Note 7
GM2	FM23-31 40-MM	40-MM Grenade Launcher	1, 2, 3, 4	Note 7
	NAVEDTRA 12085	Use and Care of Hand Tools and Measuring Tools	1-36	Note 1
	NAVEDTRA 12199	Basic Machines	3, 5, 6, 10, 11, 13	Note 1
	NAVEDTRA 12443	Gunner's Mate Training Manual		Note 1
	NAVEDTRA 12964	Fluid Power		Note 1

Rating	Short Title	Long Title	Chapters/ Paragraphs	Stocking Point
GM2 (Cont)	NAVSEA TW010-AC-ORD-010	Inspection Requirements for Receipt, Segregation, Storage and Issue of Navy and Marine Corps Conventional Ammunition (Receipt, Storage and Issue Sentencing)	1-6	Note 1
	NAVSEA OP3206 Vol.1	Handling and Stowage of Naval Ordnance Aboard	4	Note 1
	Navy Electricity and Electronics Training Series (NEETS)	Introduction to Matter, Energy, and Direct Current	Module 1	Note 1
	Navy Electricity and Electronics Training Series (NEETS)	Introduction to Alternating Current and Transformers	Module 2	Note 1
	Navy Electricity and Electronics Training Series (NEETS)	Introduction to Circuit Protection, Control, and Measurement	Module 3	Note 1
	Navy Electricity and Electronics Training Series (NEETS)	Introduction to Electrical Conductors, Wiring Techniques, and Schematic Reading	Module 4	Note 1
	Navy Electricity and Electronics Training Series (NEETS)	Introduction to Solid-State Devices and Power Supplies	Module 7	Note 1
	Navy Electricity and Electronics Training Series (NEETS)	Introduction to Number Systems and Logic Circuits	Module 13	Note 1
	Navy Electricity and Electronics Training Series (NEETS)	Introduction to Test Equipment	Module 16	Note 1
	Navy Electricity and Electronics Training Series (NEETS)	The Technician's Handbook	Module 19	Note 1
	Navy Electricity and Electronics Training Series (NEETS)	Test Methods and Practices	Module 21	Note 1
	OP 4	Ammunition Afloat	2, 3, 4	Note 1
	OP-2173	Approved Handling Equipment for Weapons and Explosives	1, 3, 15, 19, 31, 40, 53, 42	Note 1

Rating	Short Title	Long Title	Chapters/ Paragraphs	Stocking Point
GM2 (Cont)	OP-3347	USN Ordnance Safety Precautions	1, 2, 3	Note 1
	OP-3565	Electromagnetic Radiation Hazards	1, 2, 3	Note 1
	OP-4470	Guided Missile Launching System Mk 13 Mod 4, Volume 1	1, 2, 3	Note 1
	S9522-AA-HBK-010	Description, Operation and Maintenance for Magazine Sprinkling Systems	1-5	Note 1
	SW010-AF-ORD-010	Identification of Ammunition	1, 2, 3, 5, 10, 11	Note 1
	SW010-AF-ORD-010	Identification of Ammunition	1, 2, 3, 5, 10, 11	Note 1
	SW050-AB-MMA-010	Pyrotechnic, Screening, Marking and Countermeasure Devices	1, 3, 4, 5, 6	Note 1
	SW225-BC-SAF-010	Theory of Combat System Alignment	1, 3, 5	Note 1
	SW225-BC-SAF-010	Theory of Combat System Alignment	1, 3, 5	Note 1
	SW225-BC-SAF-010	Theory of Combat System Alignment	1, 3, 5	Note 1
	SW300-BC-SAF-010	Clearing of Live Ammunition from Guns	1, 2, 3	Note 1
	SW314-AO-MMM-A10/GM Mk 75 0-1	Gun Mount, 76- MM, 62-Caliber, Mk 75 Mods 0 and 1	1-6	Note 1
	SW314-AO-MMM-A20/GM Mk 75 0-1	Gun Mount, 76-MM, 62-Caliber, Mk 75 Mods 0 and 1	7-10	Note 1
	SW323-F2-MMO-040/GM	Gun Mount, 5 Inch, 54-Caliber, Mk 45 Mod 2	7-11	Note 1
	SW323-F2-MMO-010/GM	Gun Mount, 5 Inch, 54-Caliber, Mk 45 Mod 2	1, 2	Note 1
	SW350-A1-MMO-010	Description, Operation, and Maintenance Mk 87 Mod 1 Line Throwing Rifle Adapter Kit	1-7	Note 1
	SW360-AB-MMO-010	25MM M242	1, 2, 3, 4, 6	Note 1

Rating	Short Title	Long Title	Chapters/ Paragraphs	Stocking Point
GM2 (Cont)	SW394-AF-MMO-020	Vertical Launching System, Mk 41 Mods 0/1/2 Introduction and Description	1,2	Note 1
	SW394-HO-MMO-020	Guided Missile Launching System Mk 26 Mods 0-5; Description, Operation & Maintenance	1, 2	Note 1
	SW800-AC-SAF-010	Standard Missile SM-1,SM-2MR, and VLS (MR&ER) Guided Missiles		Note 1
	SWO3O-AA-MMO-010	Navy Gun Ammunition	1, 2, 3, 4, 7	Note 1
	TM 9-1005-211-12	.45 Cal Pistol	1-4	Note 7
	TM 9-1005-317-10	Pistol, Semiautomatic, 9mm, M9	1, 2, 3, 4	Note 7
	TM 9-1005-319-10	Rifle, M16A2	1	Note 7
	TM9-1005-206-14&P-1	.38 S/M Wesson	1-6	Note 7
	TM9-1005-213-10	.50 Cal Machine Gun	1-4	Note 7
	TM9-1005-223-20	M14 Rifle	1-3	Note 7
	TM9-1005-224-24	M60 Machine Gun	1-5	Note 7
GM1	FM23-31 40-MM	40-MM Grenade Launcher	1, 2, 3, 4	Note 7
	NAVEDTRA 12085	Use and Care of Hand Tools and Measuring Tools	1-36	Note 1
	NAVEDTRA 12199	Basic Machines	3, 5, 6, 10, 11, 13	Note 1
	NAVEDTRA 12443	Gunner's Mate Training Manual		Note 1
	NAVEDTRA 12964	Fluid Power		Note 1
	NAVSEA TW010-AC-ORD-010	Inspection Requirements for Receipt, Segregation, Storage and Issue of Navy and Marine Corps Conventional Ammunition (Receipt, Storage and Issue Sentencing)	1-6	Note 1
	NAVSEA OP3206 Vol.1	Handling and Stowage of Naval Ordnance Aboard	4	Note 1
	Navy Electricity and Electronics Training Series (NEETS)	Introduction to Matter, Energy, and Direct Current	Module 1	Note 1

Rating	Short Title	Long Title	Chapters/ Paragraphs	Stocking Point
GM1 (Cont)	Navy Electricity and Electronics Training Series (NEETS)	Introduction to Alternating Current and Transformers	Module 2	Note 1
	Navy Electricity and Electronics Training Series (NEETS)	Introduction to Circuit Protection, Control, and Measurement	Module 3	Note 1
	Navy Electricity and Electronics Training Series (NEETS)	Introduction to Electrical Conductors, Wiring Techniques, and Schematic Reading	Module 4	Note 1
	Navy Electricity and Electronics Training Series (NEETS)	Introduction to Solid-State Devices and Power Supplies	Module 7	Note 1
	Navy Electricity and Electronics Training Series (NEETS)	Introduction to Number Systems and Logic Circuits	Module 13	Note 1
	Navy Electricity and Electronics Training Series (NEETS)	Introduction to Test Equipment	Module 16	Note 1
	Navy Electricity and Electronics Training Series (NEETS)	The Technician's Handbook	Module 19	Note 1
	Navy Electricity and Electronics Training Series (NEETS)	Test Methods and Practices	Module 21	Note 1
	OP 4	Ammunition Afloat	2, 3, 4	Note 1
	OP-2173	Approved Handling Equipment for Weapons and Explosives	1, 3, 15, 19, 31, 40, 53, 42	Note 1
	OP-3347	USN Ordnance Safety Precautions	1, 2, 3	Note 1
	OP-3565	Electromagnetic Radiation Hazards	1, 2, 3	Note 1
	OP-4470	Guided Missile Launching System Mk 13 Mod 4, Volume 1	1, 2, 3	Note 1
	S9522-AA-HBK-010	Description, Operation and Maintenance for Magazine Sprinkling Systems	1-5	Note 1
	SPCCINST 8010.12	Supply Management of Ammunition		Note 30

Rating	Short Title	Long Title	Chapters/ Paragraphs	Stocking Point
GM1 (Cont)	SW010-AF-ORD-010	Identification of Ammunition	1, 2, 3, 5, 10, 11	Note 1
	SW050-AB-MMA-010	Pyrotechnic, Screening, Marking and Countermeasure Devices	1, 3, 4, 5, 6	Note 1
	SW225-BC-SAF-010	Theory of Combat System Alignment	1, 3, 5	Note 1
	SW300-BC-SAF-010	Clearing of Live Ammunition from Guns	1, 2, 3	Note 1
	SW314-AO-MMM-A10/GM Mk 75 0-1	Gun Mount, 76-MM, 62-Caliber, Mk 75 Mods 0 and 1	1-6	Note 1
	SW314-AO-MMM-A20/GM Mk 75 0-1	Gun Mount, 76-MM, 62-Caliber, Mk 75 Mods 0 and 1	7-10	Note 1
	SW323-F2-MMO-10/GM	Gun Mount, 5 Inch, 54-Caliber, Mk 45 Mod 2	1, 2	Note 1
	SW323-F2-MMO-040/GM	Gun Mount, 5 Inch, 54-Caliber, Mk 45 Mod 2	7-11	Note 1
	SW350-A1-MMO-010	Description, Operation, and Maintenance Mk 87 Mod 1 Line Throwing Rifle Adapter Kit	1-7	Note 7
	SW360-AB-MMO-010	25MM M242	1, 2, 3, 4, 6	Note 1
	SW394-AF-MMO-020	Vertical Launching System, Mk 41 Mods 0/1/2 Introduction and Description	1, 2	Note 1
	SW394-HO-MMO-020	Guided Missile Launching System Mk 26 Mods 0-5; Description, Operation & Maintenance	1, 2	Note 1
	SW800-AC-SAF-010	Standard Missile SM-1, SM-2MR, and VLS (MR&ER) Guided Missiles		Note 1
	SW030-AA-MMO-010	Navy Gun Ammunition	1, 2, 3, 4, 7	Note 1
	TM 9-1005-211-12	.45 Cal Pistol	1-4	Note 7
	TM 9-1005-317-10	Pistol, Semiautomatic, 9mm, M9	1, 2, 3, 4	Note 7
	TM 9-1005-319-10	Rifle, M16A2	1	Note 7
	TM9-1005-206-14&P-1	.38 S/M Wesson	1-6	Note 7
	TM9-1005-213-10	.50 Cal Machine Gun	1-4	Note 7

Rating	Short Title	Long Title	Chapters/ Paragraphs	Stocking Point
GM1 (Cont)	TM9-1005-223-20	M14 Rifle	1-3	Note 7
	TM9-1005-224-24	M60 Machine Gun	1-5	Note 7
GMC	FM23-31 40-MM	40-MM Grenade Launcher	1, 2, 3, 4	Note 7
	NAVEDTRA 12085	Use and Care of Hand Tools and Measuring Tools	1-36	Note 1
	NAVEDTRA 12199	Basic Machines	3, 5, 6, 10, 11, 13	Note 1
	NAVEDTRA 12443	Gunner's Mate Training Manual		Note 1
	NAVEDTRA 12964	Fluid Power		Note 1
	NAVSEA OP3206 Vol.1	Handling and Stowage of Naval Ordnance Aboard	4	Note 1
	Navy Electricity and Electronics Training Series (NEETS)	Introduction to Matter, Energy, and Direct Current	Module 1	Note 1
	Navy Electricity and Electronics Training Series (NEETS)	Introduction to Alternating Current and Transformers	Module 2	Note 1
	Navy Electricity and Electronics Training Series (NEETS)	Introduction to Circuit Protection, Control, and Measurement	Module 3	Note 1
	Navy Electricity and Electronics Training Series (NEETS)	Introduction to Electrical Conductors, Wiring Techniques, and Schematic Reading	Module 4	Note 1
	Navy Electricity and Electronics Training Series (NEETS)	Introduction to Solid-State Devices and Power Supplies	Module 7	Note 1
	Navy Electricity and Electronics Training Series (NEETS)	Introduction to Number Systems and Logic Circuits	Module 13	Note 1
	Navy Electricity and Electronics Training Series (NEETS)	Introduction to Test Equipment	Module 16	Note 1
	Navy Electricity and Electronics Training Series (NEETS)	The Technician's Handbook	Module 19	Note 1
	Navy Electricity and Electronics Training Series (NEETS)	Test Methods and Practices	Module 21	Note 1
	OP 4	Ammunition Afloat	2, 3, 4	Note 1

Rating	Short Title	Long Title	Chapters/ Paragraphs	Stocking Point
GMC (Cont)	OP-2173	Approved Handling Equipment for Weapons and Explosives	1, 3, 15, 19, 31, 40, 53, 42	Note 1
	OP-3347	USN Ordnance Safety Precautions	1, 2, 3	Note 1
	OP-3565	Electromagnetic Radiation Hazards	1,2,3	Note 1
	OP-4470	Guided Missile Launching System Mk 13 Mod 4, Volume 1	1, 2, 3	Note 1
	S9522-AA-HBK-010	Description, Operation and Maintenance for Magazine Sprinkling Systems	1-5	Note 1
	SPCCINST 8010.12	Supply Management of Ammunition		Note 6
	SW010-AF-ORD-010	Identification of Ammunition	1, 2, 3, 5, 10, 11	Note 1
	SW050-AB-MMA-010	Pyrotechnic, Screening, Marking and Countermeasure Devices	1, 3, 4, 5, 6	Note 1
	SW225-BC-SAF-010	Theory of Combat System Alignment	1, 3, 5	Note 1
	SW300-BC-SAF-010	Clearing of Live Ammunition from Guns	1, 2, 3	Note 1
	SW314-AO-MMM-A10/GM Mk 75 0-1	Gun Mount, 76- MM, 62-Caliber, Mk 75 Mods 0 and 1	1-6	Note 1
	SW314-AO-MMM-A20/GM Mk 75 0-1	Gun Mount, 76- MM, 62-Caliber, Mk 75 Mods 0 and 1	7-10	Note 1
	SW323-F2-MMO-010/GM	Gun Mount, 5 Inch, 54-Caliber, Mk 45 Mod 2	1, 2	Note 1
	SW323-F2-MMO-040/GM	Gun Mount, 5 Inch, 54-Caliber, Mk 45 Mod 2	7-11	Note 1
	SW350-A1-MMO-010	Description, Operation, and Maintenance Mk 87 Mod 1 Line Throwing Rifle Adapter Kit	1-7	Note 7
	SW360-AB-MMO-010	25MM M242	1, 2, 3, 4, 6	Note 1

Rating	Short Title	Long Title	Chapters/ Paragraphs	Stocking Point
GMC (Cont)	SW394-AF-MMO-020	Vertical Launching System, Mk 41 Mods 0/1/2 Introduction and Description	1, 2	Note 1
	SW394-HO-MMO-020	Guided Missile Launching System Mk 26 Mods 0-5; Description, Operation & Maintenance	1, 2	Note 1
	SW800-AC-SAF-010	Standard Missile SM-1, SM-2MR, and VLS (MR&ER) Guided Missiles		Note 1
	SWO3O-AA-MMO-010	Navy Gun Ammo	1, 2, 3, 4, 7	Note 1
	TM 9-1005-211-12	.45 Cal Pistol	1-4	Note 7
	TM 9-1005-317-10	Pistol, Semiautomatic, 9mm, M9	1, 2, 3, 4	Note 7
	TM 9-1005-319-10	Rifle, M16A2	1	Note 7
	TM9-1005-206-14&P-1	.38 S/M Wesson	1-6	Note 7
	TM9-1005-213-10	.50 Cal Machine Gun	1-4	Note 7
	TM9-1005-223-20	M14 Rifle	1-3	Note 7
	TM9-1005-224-24	M60 Machine Gun	1-5	Note 7

LEGEND:

Note 1: To order, MILSTRIP to NAVICP PHILA (Stock Number from NAVSUP 2002) or via INTERNET <http://www.nll.navsup.navy.mil>

Note 2: Obtain from local source

Note 3: INTERNET <http://www.nll.navsup.navy.mil> or <http://www.dodssp.daps.mil/usndirs.htm>

Note 4: Available via INTERNET <http://www.spear.navy.mil/JFMM>

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Note 6: DIS Notice 210-0-1

Note 7: OPNAV Notice 5215

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